

THE INVENTION CLAIMED IS:

1. A printer comprising:
a print engine; and
a monochrome formatter connected to the print engine and being operatively
5 connectable to a color chip.
2. The printer as claimed in claim 1 wherein:
the print engine is for a monochrome printer; and
the monochrome formatter includes a first memory controller for controlling access to
a storage device of the printer.
- 10 3. The printer as claimed in claim 1 wherein:
the print engine is for a monochrome printer; and
the monochrome formatter includes a processor operatively connectable to the color
chip and capable of controlling a color chip.
- 15 4. The printer as claimed in claim 1 wherein:
the print engine is for a monochrome printer; and
the monochrome formatter includes a first decompressor operatively connectable to a
color chip, the first decompressor for decompressing data for the print engine.
- 20 5. The printer as claimed in claim 1 wherein:
the print engine is for a monochrome printer; and
the monochrome formatter includes means for connecting access connections from a
color chip.
- 25 6. The printer as claimed in claim 1 wherein:
the print engine is for a color printer; and
further comprising:
a color chip operatively connected to the monochrome formatter.
- 30 7. The printer as claimed in claim 1 further comprising:
the print engine is for a color printer;
the monochrome formatter comprising a first memory controller for controlling access
to a storage device of the printer; and
further comprising:

a color chip operatively connected to the monochrome formatter and comprising a second memory controller cooperating with a first memory controller for controlling access to the storage device.

8. The printer as claimed in claim 1 wherein:

5 the print engine is for a color printer;

the monochrome formatter includes a processor for controlling the operations of the monochrome formatter; and

further comprising:

10 a color chip operatively connected to the monochrome formatter and using the processor to control operations of the color chip.

9. The printer as claimed in claim 1 wherein:

the print engine is for a color printer;

the monochrome formatter includes a first decompressor for decompressing data for the print engine; and

15 further comprising:

a color chip operatively connected to the monochrome formatter and comprising a second decompressor for decompressing data for the print engine.

10. The printer as claimed in claim 1 wherein:

the print engine is for a color printer; and

20 further comprising:

a color chip operatively connected to the monochrome formatter and comprising means for requesting and granting operative connection between the color chip and the monochrome formatter.

11. A printer comprising:

25 a print engine; and

a monochrome formatter connected to the print engine and comprising a first internal communication bus operatively connectable to a second internal communication bus in a color chip.

12. The printer as claimed in claim 11 wherein:

30 the print engine is for a monochrome printer; and

the monochrome formatter includes a first memory controller for controlling access of a plurality of components to a storage device of the printer, the first memory

controller further comprising an arbiter for determining component access to the storage device.

13. The printer as claimed in claim 11 wherein:
the print engine is for a monochrome printer; and
the monochrome formatter includes a processor operatively connectable to the color chip and capable of having access by a color chip.

5

14. The printer as claimed in claim 11 wherein:
the print engine is for a monochrome printer; and
the monochrome formatter includes a first decompressor operatively connectable to a
10 color chip, the first decompressor for decompressing monochrome data for the
print engine.

10

15. The printer as claimed in claim 11 wherein:
the print engine is for a monochrome printer; and
the monochrome formatter further includes connectors for connecting request and
15 grant lines from a color chip.

15

16. The printer as claimed in claim 11 wherein:
the print engine is for a color printer; and
further comprising:
a color chip including a second internal communication bus operatively connected to
20 the first internal communication bus of the monochrome formatter.

20

17. The printer as claimed in claim 11 further comprising:
the print engine is for a color printer;
the monochrome formatter including a first memory controller for controlling access
to a storage device of the printer; and
25 further comprising:

25

a color chip operatively connected to the monochrome formatter and including a
second memory controller having a requestor cooperating with a first memory
controller having an arbiter for controlling access to the storage device.

18. The printer as claimed in claim 11 wherein:
the print engine is for a color printer;
the monochrome formatter includes a processor for controlling the operations of the
monochrome formatter; and
30

further comprising:

a color chip operatively connected to the monochrome formatter and using the processor to control operations of the monochrome formatter and the color chip.

5 19. The printer as claimed in claim 11 wherein:

the print engine is for a color printer;

the monochrome formatter includes a first decompressor for decompressing a portion of data for the print engine; and

further comprising:

10 a color chip operatively connected to the monochrome formatter and comprising a second decompressor for decompressing the remainder of the data for the print engine.

20. The printer as claimed in claim 11 wherein:

the print engine is for a color printer; and

15 further comprising:

a storage device in at least one of the monochrome formatter, the color chip, and a combination thereof; and

20 a color chip operatively connected to the monochrome formatter and comprising means for requesting and granting operative connection between a second internal bus in the color chip and the first internal bus of the monochrome formatter to control data storage in the storage device.